AMENDMENT

In the Claims

Please cancel claims 1-5, and 7-12.

Please add following new claims:

13. A high throughput method for determining whether a compound or mixture of compounds is suitable for intended use as a drug or a natural product, said method comprising:

(a) placing a first solution comprising biological material having higher molecular weights than the compounds or mixture of compounds, into an ultrafiltration chamber, said chamber comprising a membrane with pore sizes that will not allow passage of the biological material out of the chamber;

(b) placing the compound or mixture of compounds into the ultrafiltration chamber, said chamber comprising a membrane with pore sizes that allow passage of the compound or mixture of compounds out of the chamber;

(c) providing a supportive solution to the ultrafiltration chamber that facilitates reactions between the biological material and the compound or mixtures of compounds to produce products of the reactions wherein the ultrafiltration chamber allows passage of the products out of the chamber to form a second solution, but does not allow passage of the biological materials;

(d) analyzing the second solution comprising the products of the reactions between the biological material and the compound or mixture of compounds, to determine whether the compound or any of the mixture of compounds is suitable for use as a drug or natural product.

14. The method of claim 13, wherein the biological material is selected from a group consisting of a protein, a peptide, an oligonucleotide, an oligosaccharide, a microsome, a cell, a tissue, an enzyme, DNA and RNA.

15. The method of claim 13, wherein the compound or mixture of compounds is selected from the group consisting of a natural product, a combinatorial library, a drug, a drug mixture, a xenobiotic compound, a mixture of xenobiotic compounds, an endogenous compound, a mixture of natural products, and a mixture of endogenous compounds.

16. The method of claim 13, wherein the supportive solution is selected from a group

consisting of a buffer, a nutrient medium, or a combination thereof, said supportive solution maintaining the biological material in a state wherein the biological material reacts with a compound or mixture of compounds in the sample.

17. The method of claim 16, wherein the supportive solution facilitates the reactions of the biological material with the first solution and facilitates the removal of compounds, or mixture of compounds and products of the reactions between the compound or mixture of compounds and the biological material, by washing them through the ultrafiltration chamber into the second solution.

18. The method of claim 13, wherein the compound or mixture of compounds is added by means of injection.

19. The method of claim 13, wherein the suitable conditions for reactions between the biological material in the first solution with the compound or mixture of compounds, comprises mixing the sample with the biological material to achieve a homogeneous distribution of sample, controlling temperature to maintain function of the biological material, providing adequate concentration of sample and sufficient amount of biological material to facilitate analysis, providing sufficient time for interaction, and controlling atmospheric gases to maintain function of the biological material.

20. The method of claim 13, wherein the analyzing of the second solution is by mass spectrometry.

21. The method of claim 13, wherein the products of the reactions comprise metabolites, glutathione adducts, and small molecules to determine cellular absorption.

22. The method of claim 13, wherein multiple chambers with ultrafiltration membranes are arranged in parallel with a single mass spectrometer for step d.

23. A kit for analyzing a compound or mixture of compounds to determine if a compound or any of the mixture of compounds are suitable for use as a drug or natural product, by analyzing reaction products between biological material and the compound or mixture of compounds, said kit comprising in separate containers, (a) an ultrafiltration membrane with pore sizes that allow passage of the compound or mixture of compounds and reaction products, but not passage of the biological material, (b) a first solution containing the biological material, and (c) standards against which to compare analysis of the products of reactions between the first solution and the compounds or mixture of compounds to determine suitability as a drug or

natural product.

24. A high throughput method for determining characteristics of a compound or mixture of compounds, the method comprising:

(a) interacting the compound with a biological material in a first solution or suspension to form products;

(b) providing an ultrafilitration membrane in contact with the first and a second solution with pores of suitable size to allow the products to pass from the first solution through the membrane into the second solution; and

(c) analyzing the products in the second solution.

25. The method of claim 24, wherein the compound in the first solution is a drug, the biological material that interacts with the drug is selected from the group consisting of cytochrome P40, UDP-glucuronyltransferases, and glutathione transferase, and analysis is by pulsed ultrafiltration mass spectrometry.

26. The method of claim 24, wherein the first solution comprises chlorpromazine and rat liver microsomal cytochrones P450, NADPH is added, and results of chlorpromazine oxidation are analyzed by pulsed ultrafiltration positive ion electroscopy mass spectrometry.

27. The method of claim 24, wherein rat liver microsomes containing cytochrome P450 and microsomal glutalthione S-transfease interact with butydimethyl phenol, NADPH and glutathione on the first solution side of the ultrafiltration membrane, and metabolites produced by the interaction pass through the membrane into a second solution for analysis by negative ion electroscopy-mass spectrometry, wherein the metabolite quinine methide reacts with water or with glutathione to for an adduct.

28. The method of claim 24, wherein epithelial cells and xenobiotic compounds are in the first solution, compounds that are excluded from entering the cells elute first through the ultrafiltration membrane, compounds that enter the cells may elute later, and analysis of bioavailability is determined by inverse correlation with eluting time.

29. A method to assess drug metabolism using a high throughput system, the method comprising:

(a) interacting the drug with hepatic microsomes and the cofactor NADPH in a first solution on one side of an ultrafiltration membrane with pore sizes that allow all metabolites to pass through to the other side; and